

# Hypercool

## Water Cooled Aftercoolers



### Compressed Air and Gas

Compressed air and gases contain high levels of liquid water vapour. Effective water removal leads to reduced maintenance costs, enhanced system operation and improved product quality. Hypercool represents the vital first step in this process, eliminating most of the water present within compressed air and gas systems.

Many industrial applications require controlled compressed air or gas temperature for efficient operation, a requirement for which Hypercool is perfectly suited.

Hypercool has been specifically designed to achieve maximum cooling at minimum cost, within a package designed to withstand the rigors of modern industry.

A large range of models, Hypercool includes: fixed and removable coolers, different material grades (both for the gas and water circuit), high pressure and high temperature options to meet specific user requirements.

### Hydrogen

Hypercool represents the first important step in the process of water removal from the hydrogen stream of hydrogen electrolyzers. The effective removal of water reduces product loss as well as corrosion, contamination and damage to downstream equipment.

Hypercool offers high heat exchange efficiency with minimal pressure drops. Manufactured completely in AISI316L and TIG welded it ensures high reliability.



### Gas Treated

- Compressed air
- Hydrogen
- Oxygen
- Biogas
- Nitrogen
- Methane
- Carbon dioxide
- Carbon monoxide
- Helium

### Applications

- Air compressors
- Intercoolers
- Pneumatic transport
- Pre-cooling for adsorption and refrigeration dryers
- Heat recovery
- Biogas dehumidification
- Biomethane cooling
- Hydrogen electrolyser
- Glass industry
- Breathing air, as auxiliary accessory



ENGINEERING YOUR SUCCESS.

# Product Features

Aftercoolers can be installed immediately downstream of compressors or blowers in order to remove over 80% of the condensate.

Their function is to protect the entire compressed air system or production process. They control the air or gas temperature, which can be very high at the compressor outlet.

A high quality aftercooler properly sized is an excellent investment that can help ensure that the compressed air or gas system works properly thereby guaranteeing the quality of the finished product.

- Significant energy and capital investment savings.
- Optimises the performance of compressed air systems and gas treatment stations.
- Reduce maintenance and ensures reliable continuous operation.
- Very low pressure drop thanks to our unique ribbed tubes design.
- Horizontal and vertical configuration depending on the user's needs.
- 2014/68/EU approval as standard (ASME available on request).



## Removable Version\*

Unique ribbed tube design, ensuring high performance with low pressure drop, designed for easy maintenance.

\*Optional centrifugal water separator supplied separately.



## Fixed Configuration Version

With unique ribbed tube design, ensuring high performance with low pressure drop.

### Aftercooler Models

#### WFN/WRN

- Steel shell and copper tubes.

#### WRS

- Steel shell and stainless steel tubes.

#### WRA

- Completely stainless steel.

#### WFP/WRP

- Steel/stainless steel or completely stainless steel for high pressure application (on request).

### Versions

- Fixed or removable tube bundles.
  - Carbon steel shell and copper tubes for standard applications.
  - Completely in stainless steel for aggressive gas and/or water (AISI304 as standard AISI316 on request).
  - Carbon steel shell and stainless steel tubes for aggressive air or gas.
  - High pressure models (on request).
  - Threaded and flanged models.
  - Horizontal and vertical configurations.
  - With or without counter flange kit (available in Steel or Stainless Steel depending on the user requirements).
- Counter flange kit must be ordered separately.

# Operation

Hypercool works using a counterflow operation, where hot air or gas is cooled down, eliminating heat.

The air or gas passes through the aftercooler's cooling tubes, whilst chilled process water passes over the tubes in the opposite direction.

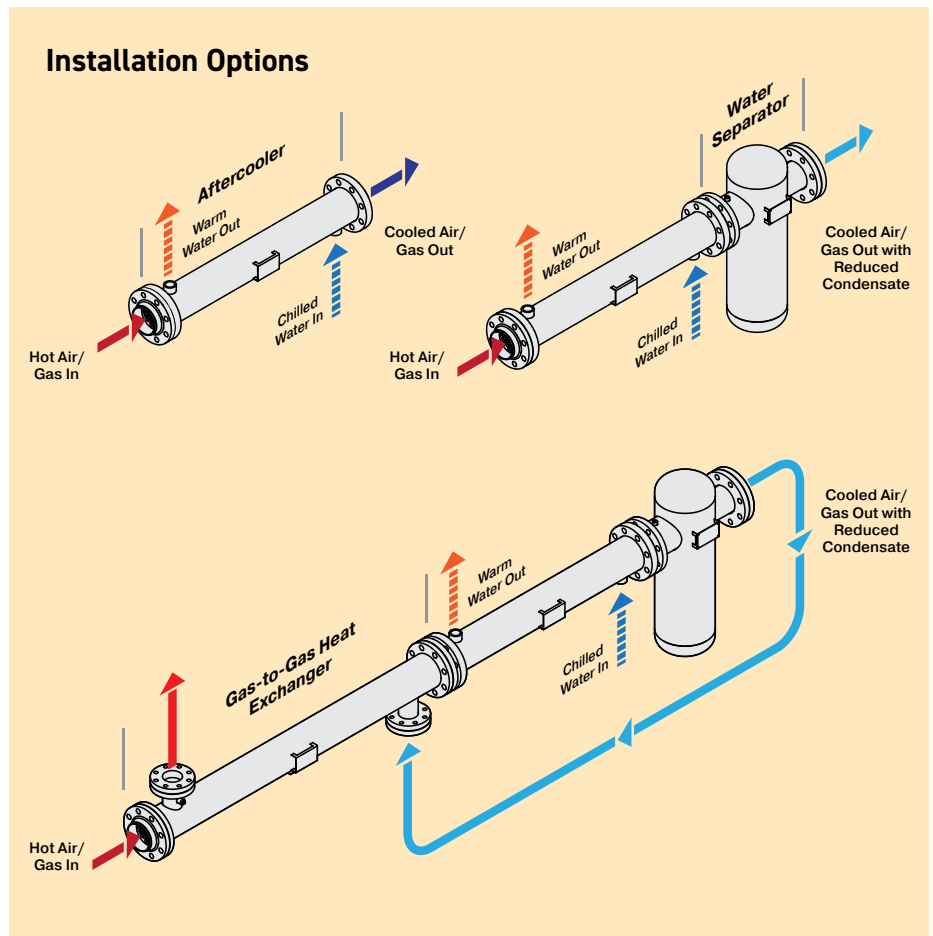
The air or gas is cooled to temperature which on average is about 10°C above the water inlet temperature, but lower temperatures can also be reached

Water condensate is created which can be efficiently removed by with a water separator installed at the cooler outlet.

## Energy Saving Feature

A Gas-to-Gas Heat Exchanger (SAA) can be supplied to reduce the inlet gas temperature and re-heat the gas after the cooling process thus reducing the final relative humidity of the gas and avoiding the possibility of any further condensation in the pipework.

Energy saving is achieved first by reducing the inlet gas temperature and also by eliminating the requirement for an additional energy source to reheat the gas



# Accessories

## Centrifugal Water Separator

Hypercool aftercoolers can be supplied either with or without a water separator.

- **STH-C:**  
Stainless steel, clamp connections.
- **SFH:**  
Steel, flanged connections.
- **SFH-A:**  
Stainless steel, flanged connections.
- **SFH-P:**  
High pressure.



Separators are available either for horizontal or vertical installation.

## Condensate Drains

Zero-loss drains are also available to guarantee an efficient removal of all the condensate and impurities.

- **HDF Mechanical Float Drains**  
No need for electrical wiring, available with or without vent line.
- **ED Series Electronic Drains**  
With level sensing control for optimised and loss-free discharge of condensate, available with potential-free alarm contacts.



HDF Drain



ED Drain

## Water Chillers

In case the user doesn't have available chilled process water, Parker can select and offer a matching water chiller for the supplying of cold water.

- **Hyperchill Plus-E (ICEP-E)**
- **Hyperchill (ICE)**



Hyperchill Plus-E



Hyperchill

# Technical Data

Model	Air Flow	Maximum Pressure		Nominal Water Consumption	Cooler Connections		Dimensions mm				Weight	Matching Hypersep* Separator
	m <sup>3</sup> /min	barg	psig	m <sup>3</sup> /h	Air	Water	A	B	C	D	kg	

## Fixed Tube-Bundle Version

WFN050	50	12	174	10	DN125	1¼"	1300	100	58	1963	71	SFH066N
WFN090	90	12	174	11	DN200	1¼"	1300	100	65	1990	121	SFH086N
Other models on request												

## Removable Tube-Bundle Version

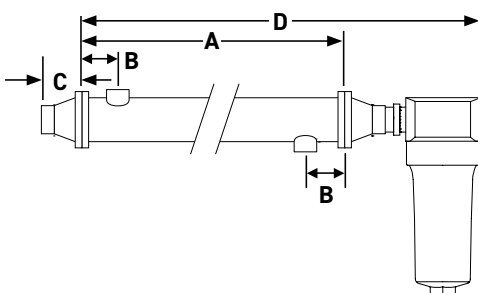
WRN007	7	16	232	1.5	DN 50	½"	1050	72	77	1257	20	STH013N
WRN016	16	16	232	3.5	DN 80	¾"	1300	122	92	1563	37	STH021N
WRN028	28	12	174	4	DN 100	1"	1300	122	55	1703	54	SFH030N
WRN050	50	12	174	10	DN 125	1¼"	1300	123	58	1853	71	SFH066N
WRN090	90	12	174	11	DN 200	1¼"	1300	117	65	1873	161	SFH089N
WRN130	130	10	145	13	DN 250	1½"	1300	116	71	1983	194	SFH142N
WRN170	170	10	145	17.5	DN 300	2"	1300	116	71	2053	244	SFH180N
WRN250	250	10	145	19	DN 350	DN 65	1500	196.5	71	2503	351	SFH280N
WRN350	350	10	145	37	DN 450	DN 80	1500	148.5	75	2703	400	SFH390N
WRN450	450	10	145	46	DN 500	DN 100	1500	199.5	78	3436	609	SFH450N
WRN550	550	10	145	50	DN 600	DN 100	1515	200	83	3606	931	SFH550N

Performances refer to clean cooler conditions with air at FAD 20°C/1 bar A, and at the following working conditions:

air suction 25°C/60% RH, 7 bar g working pressure, 120°C compressed air inlet temperature, 20°C cooling water inlet temperature, temperature approach between air outlet and water inlet of ca. 10°C. Performances of models manufactured with non-standard materials may differ from those indicated above. Maximum air inlet temperature: 200°C (for higher temperature and other gases contact Parker Sales Companies)

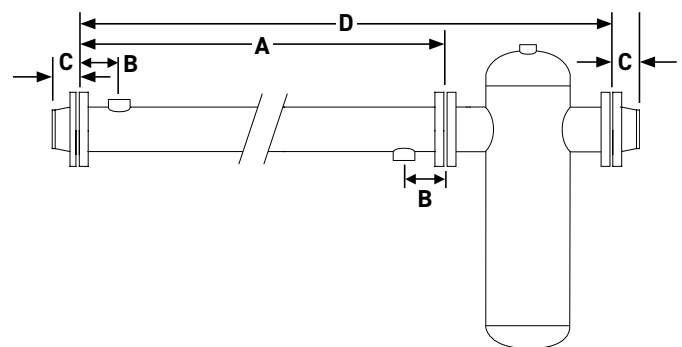
### 007-016

(with Hypersep STH\* separator)



### 028-550

(with Hypersep SFH\* separator)



\*Hypersep liquid separators sold separately.

[www.parker.com/gsf](http://www.parker.com/gsf)



European Headquarters  
La Tuilière 6, 1163 Etoy,  
Switzerland  
Tel: +41 21 821 85 00

EMEA Product Information Centre  
Free phone: 00 800 27 27 5374  
(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL,  
IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)  
US Product Information Centre  
Toll-free number: 1-800-27 27 537